

1116-37-2433

**William Gignac\*** ([william.gignac@math.gatech.edu](mailto:william.gignac@math.gatech.edu)). *A nonarchimedean approach to local holomorphic dynamics in dimension two.*

Let  $f$  be a rational endomorphism of a complex algebraic surface  $X$ , and suppose that  $f$  has a fixed point  $x$ . Analyzing the dynamics of  $f$  near such a fixed point is often an essential step in understanding the global dynamical behavior of  $f$  on  $X$ . In this talk, I will describe a nonarchimedean approach to analyzing the local dynamics in the case when  $f$  is noninvertible near  $x$ . Instead of considering directly the dynamics of  $f$  near  $x$  in  $X$ , we will instead equip the field of complex numbers with the trivial absolute value and study the local dynamics of  $f$  near  $x$  in the corresponding Berkovich analytification of  $X$ . This will allow us to understand the dynamics of  $f$  on certain birationally equivalent models of  $X$ , and in turn deduce concrete information about the original (archimedean) dynamical system. Our main application is that one can almost always find modifications of  $X$  over  $x$  on which  $f$  exhibits a desirable "algebraic stability" property. (Received September 22, 2015)